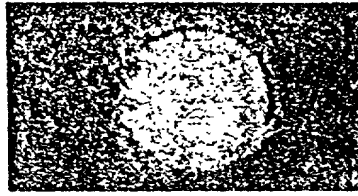


Figure 1

2(A)



12 hpf

2(B)



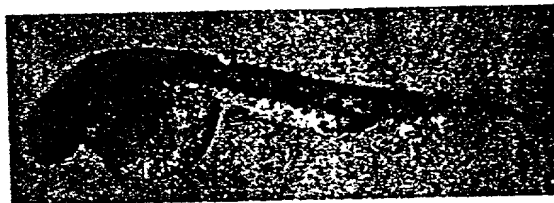
16 hpf

2(C)



24 hpf

2(D)



48 hpf

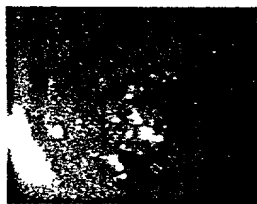
Figure 2 (A)-(D)

3(A)



H3 Antibody 24f

3(B)



upf Acridine Orange

Figure 3 (A)-(B)

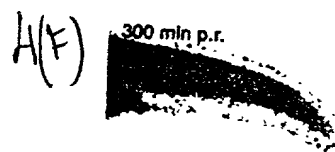
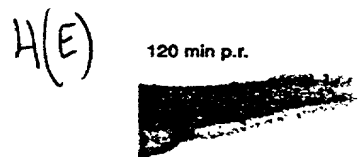
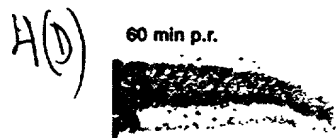
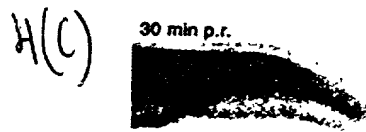
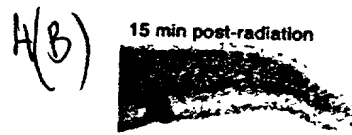


Figure 4 (A)-(F)

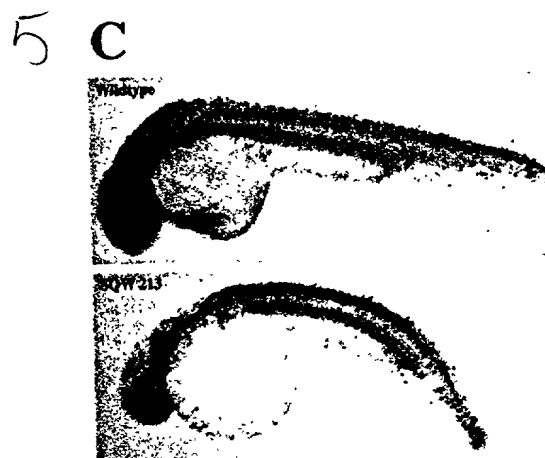
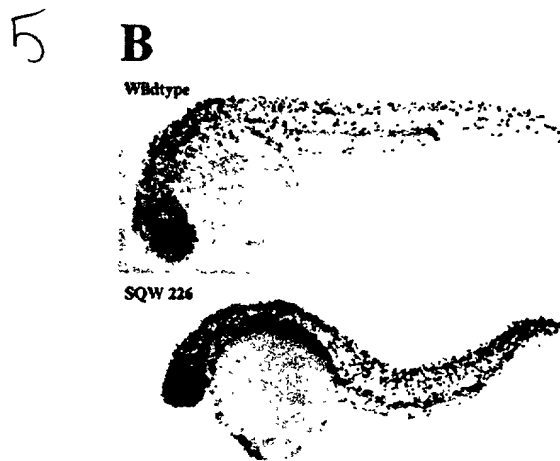
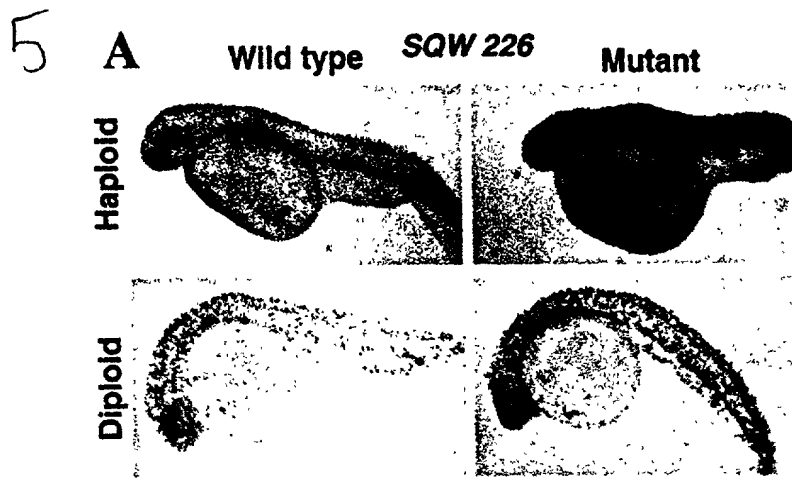
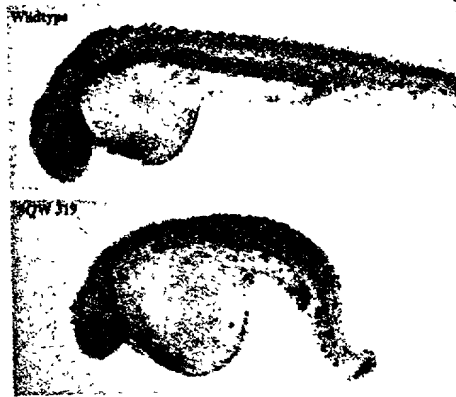
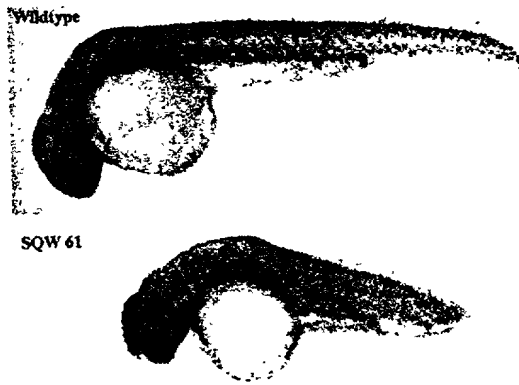


Figure 5 (A)-(C)

5 D



5 E



5 F

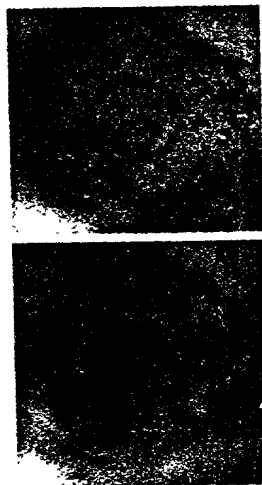
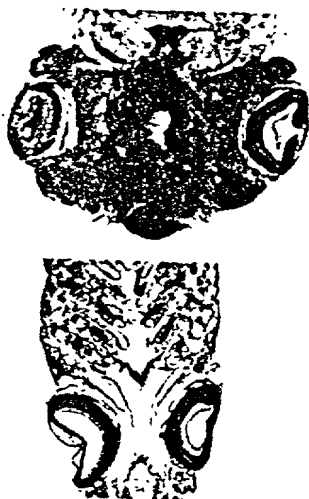


Figure 5 (D)-(F)

6

A



6

B



Figure 6 (A)-(B)

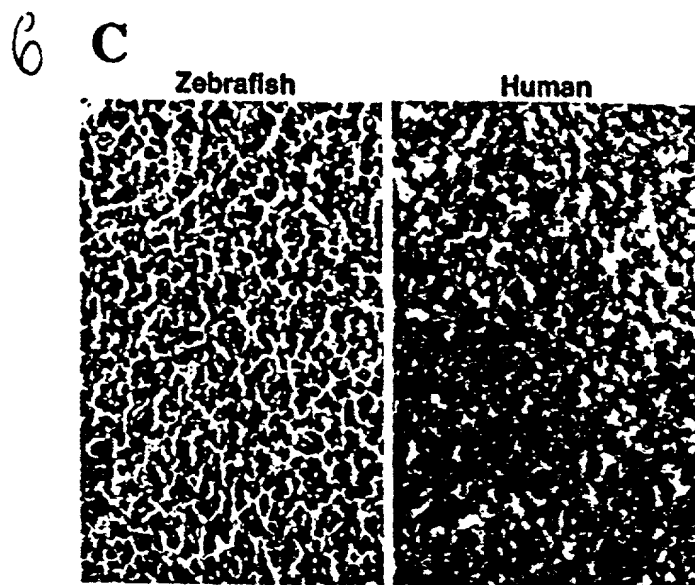


Figure 6 (C)-(D)

6 E

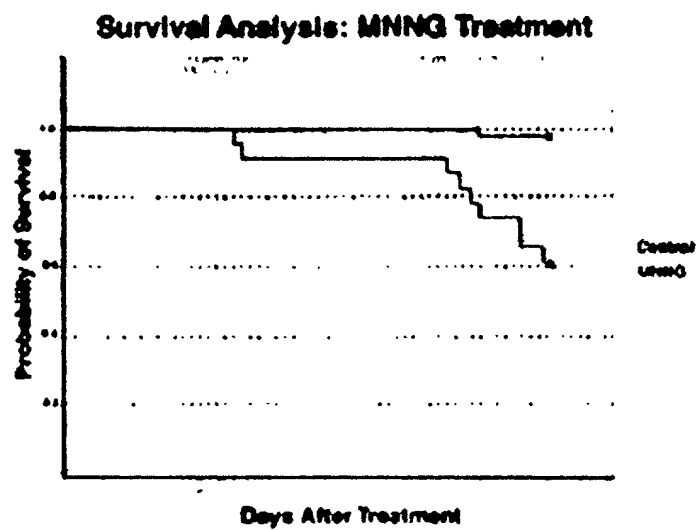
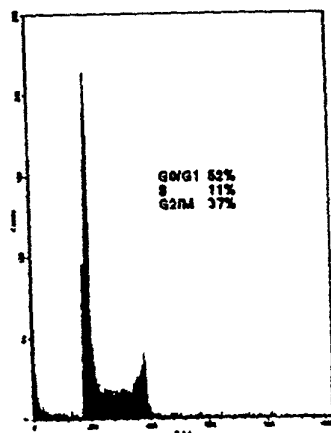


Figure 6 (E)

7 A

Single-Embryo FACS Analysis



7

B

FACS Analysis of Embryos after Ionizing Radiation

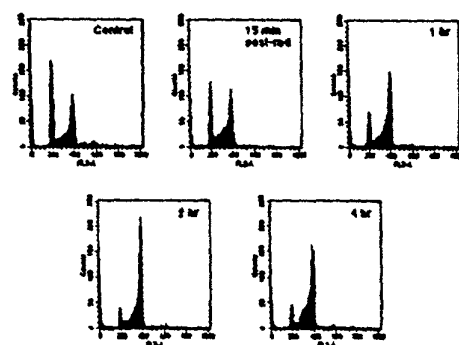


Figure 7 (A)-(B)

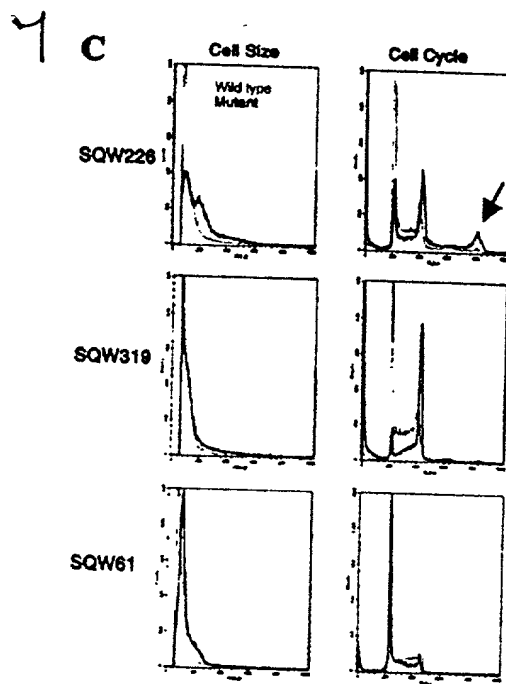
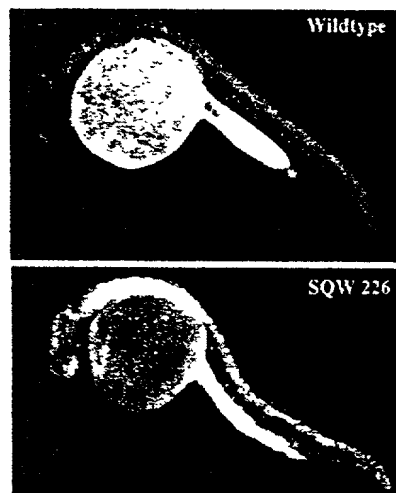


Figure 7 (C)

8

A



8

B

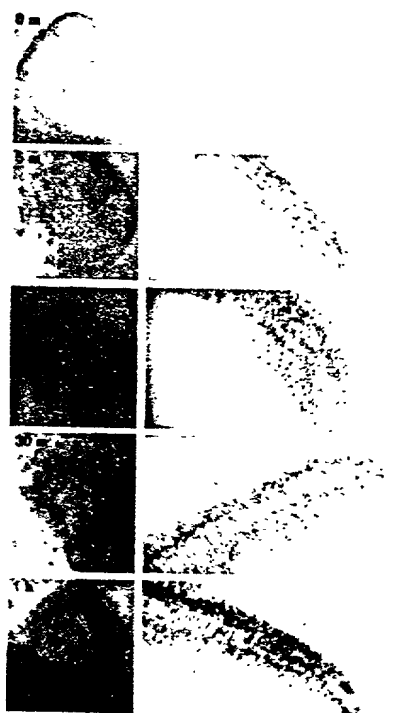


Figure 8 (A)-(B)

8 C

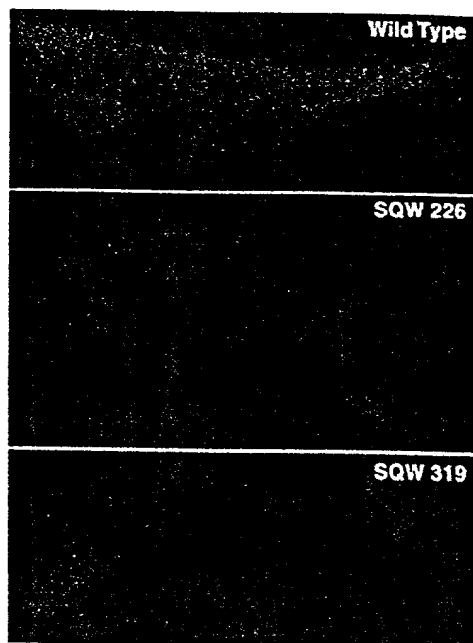


Figure 8 (C)

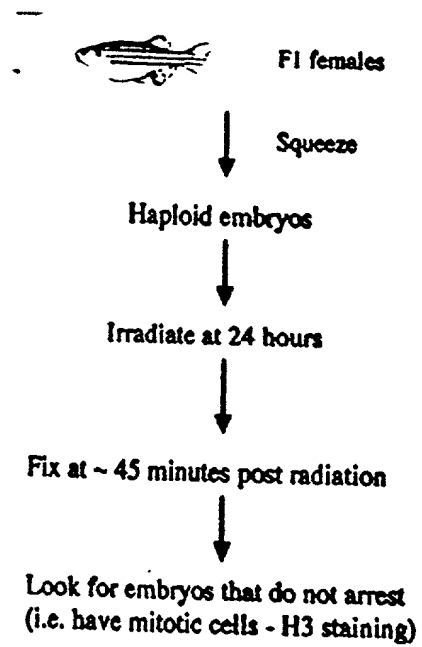
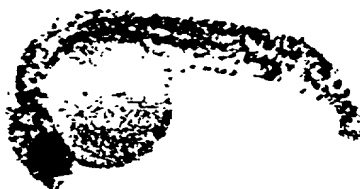


Figure 9

WT
non-irradiated



WT
irradiated



SQW 226
irradiated



Figure 10

Zfish MPPK--KSSGTQKKELXGSLKSRSPQSGH-----AVLSPERHKCKQFVVFSEECSTNSICOMVIRMER 68
 Frog MPPKSPK--QQIPSCGEPSPQRP-----OFQOPQIFICEKXISONVRGOWNTYK 53
 Human MPPKTPKXTAATAAAAAEPPAPPPPOPOPEEDPEQSGPDLPLVRLFEETEEDPTALCCCKIPCHYREAVLTMEK 30

Zfish EIRSMCK-TNMPYSNPQQTGAL-TPQMELEGINLITQFLKAVGLSKQFISVRKUMVNDTSPVNSVTPLENT 147
 Frog MFPSCYMRRE-TAKXESLGLLTIASVOCEENTFTFIELLILRLSNRCFRLRENDINQVLKQVONATSKLKKT 132
 Human VSSVQVGLGGYIQKKELNGLIFILAVCLDENSFITELQNIETSHKFFMLKETOT-----STQONNSPLKKT 155

Zfish DVTLLTYQRFYKIGSUFAPDMA-----KRKELWESSITMFLAKETFLGEGDVISFLLVLEFARLSPSL 220
 Frog ENMCLLQKFCQIFLIFEECHMT--RAAVDTAPILXGTITFLLARCKILQDIELVISFLLVLOYEILSPSSI 209
 Human DVLFAIFSKLERICGLYLTQPS-SISTEINSALVLKYSITFLLAKGVLQEGDVISFLLVLOYEILSPSM 234

Zfish LQSPNSVSSSTLSPPTTSRPNQCKSKPR--PAEMDQLLETQKGGQSVDBYQVQSTCMLDSVLLGLQGL 298
 Frog LKEPYKSAINGLPVNTPPSSSRPSQNRNTRYSPQSBTISKYLEFLGQNYQPMOBPPVYSTSVDFASAGISSNECIP 289
 Human LKEPYKTA--IPINGSPTRPGQNSAPLAKQLENTRIEVLKKEHEQNDKQVYFKNIFVNSLGLVTSKGL 312

Zfish PMEALSKQTEELHPSKIDARLFLSQEITLSPNKIEVSKYEVTPRNLFAEDLAPMOTISAAITSICQLRGDTSG 373
 Frog KYESLSRQTEELHPSKIDARLFLSQEITLKVQVQSLOLERIFRHO--ESVFPPIPTQVQVQNTVQQLNTLSSA 367
 Human EVENLSKQTEELHPSKIDARLFLSQEITLQVQVQSLOLERIFRHO--ESVFPPIPTQVQVQNTVQQLNTLSSA 392

Zfish SDCPSNLLWYKICVQSGEIKQVEELGEVFIQRFQANQCHQEGLRKCYLQALYKQVMSMLKSEEBRLSVQ 458
 Frog NDKSPOTLDSYFSKICVQSGEIKQVEELGEVFIQRFQANQCHQEGLRKCYLQALYKQVMSMLKSEEBRLSVQ 447
 Human SDCPSNLLWYKICVQSGEIKQVEELGEVFIQRFQANQCHQEGLRKCYLQALYKQVMSMLKSEEBRLSVQ 472

Zfish FSKLLNAAFTSLACALVMTITVGSLSKNGGCFPSGASOSVESOLCPHILSVFQLPAPDYKVIKESFKAEPIL 538
 Frog FSKLLNAAFTSLACALVMTITVGSLSKNGGCFPSGASOSVESOLCPHILSVFQLPAPDYKVIKESFKAEPIL 518
 Human FSKLLNAAFTSLACALVMTITVGSLSKNGGCFPSGASOSVESOLCPHILSVFQLPAPDYKVIKESFKAEPIL 542

Zfish KXDMVHLECEVIMESLAWAOSPLFDLIKQRE-EGPGEQAEPPATINQFLHNTAADLILSPVPCQK----- 510
 Frog TSNMIMLECEVIMESLAWAOSPLFDLIKQRE-EGPGEQAEPPATINQFLHNTAADLILSPVPCQK----- 598
 Human TRSYIMLECEVIMESLAWAOSPLFDLIKQRE-EGPGEQAEPPATINQFLHNTAADLILSPVPCQK----- 622

Zfish --P-PVMEAPPTP--GTRAPRSLSLFYKKLYRMYLRUQVLFSLITSHPEEPITHTLCTILOEVELMRDRHL 685
 Frog TSSVTNGQYSSSQPVQ---QKSTSLSLFYKKLYRMYLRUQVLFSLITSHPEEPITHTLCTILOEVELMRDRHL 674
 Human NST-ANAETCATSAFQTKPLKSTSLSLFYKKLYRMYLRUQVLFSLITSHPEEPITHTLCTILOEVELMRDRHL 701

Zfish QLETSATATGMYAMOLPRTIVTAYKELPNTQETFRVLTREGQYOSTIVFYLRKOLNTILOYSPPFPLSF 765
 Frog QIMYCSNOCQKRIOLPRTIVTAYKELPNTQETFRVLTREGQYOSTIVFYLRKOLNTILOYSPPFPLSF 754
 Human QIMYCSNOCQKRIOLPRTIVTAYKELPNTQETFRVLTREGQYOSTIVFYLRKOLNTILOYSPPFPLSF 781

Zfish IIPHIFSPFK--NSPLVPCSNNVYSPLSSRV-----SPLVMTSRRIISIGESGSADCFKTHQVSSONSLS 837
 Frog IIPHIFSPFK--NSPLVPCSNNVYSPLSSRV-----SPLVMTSRRIISIGESGSADCFKTHQVSSONSLS 831
 Human IIPHIFSPFK--NSPLVPCSNNVYSPLSSRV-----SPLVMTSRRIISIGESGSADCFKTHQVSSONSLS 860

Zfish RSLGGSAFKPLKLRFDQCOBAGSKS-SGESALQKLAENSTSTRVQCKLKEESOKHPS 904
 Frog RSDTGTPKPLKLRFDQCOBAGSKS-SGESALQKLAENSTSTRVQCKLKEESOKHPS 899
 Human RSEGSNPKPLKLRFDQCOBAGSKS-SGESALQKLAENSTSTRVQCKLKEESOKHPS 928

SEQ ID NO: 1
 SEQ ID NO: 2
 SEQ ID NO: 3

Figure 11

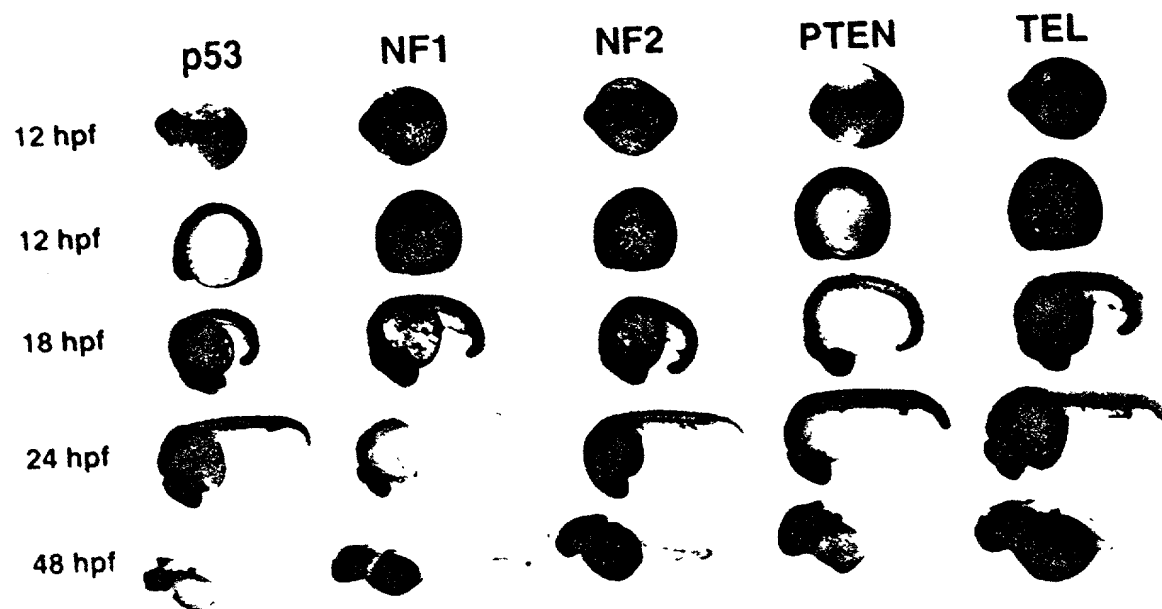


Figure 12



Figure 13 (A)-(C)

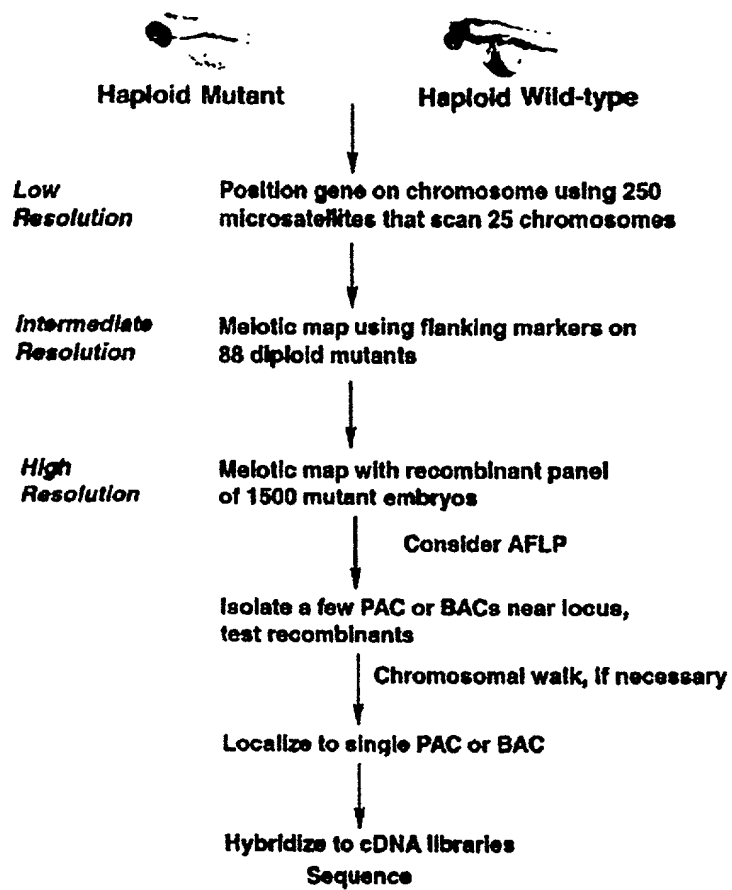
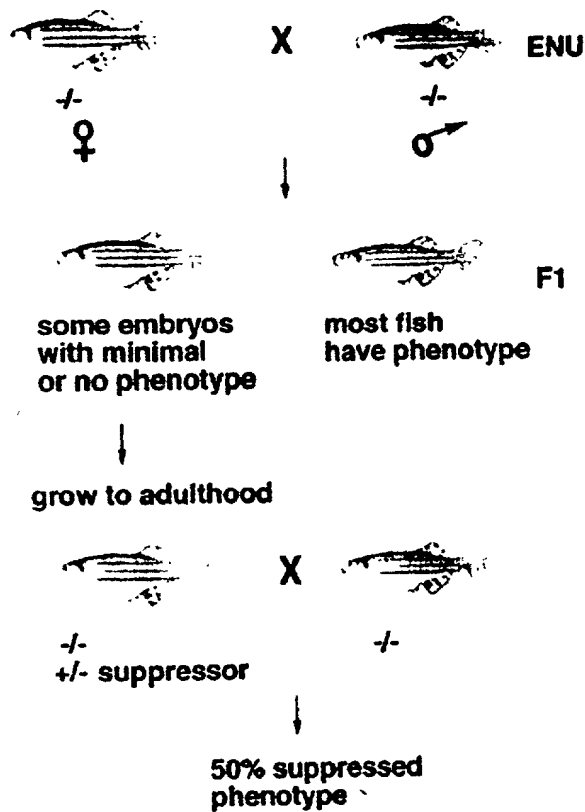
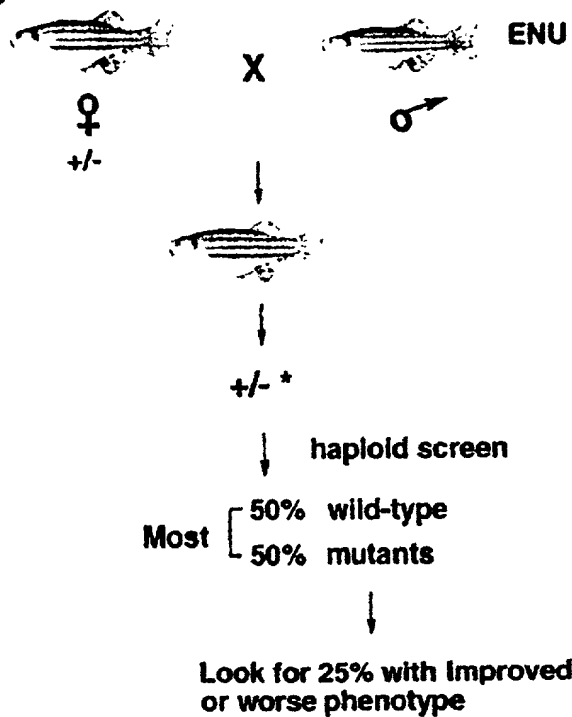


Figure 15

16 A

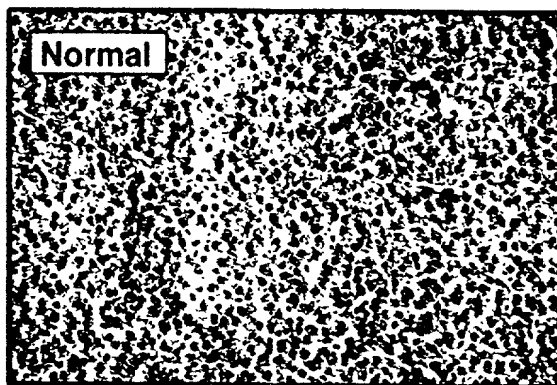


16 B

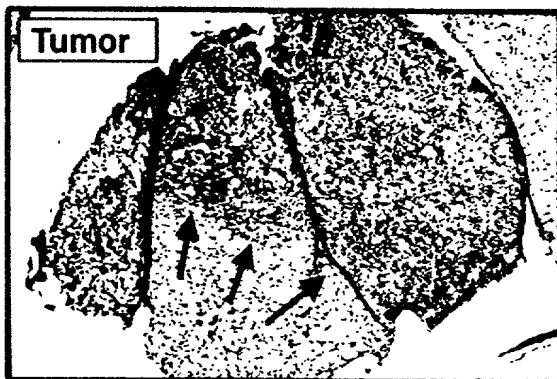


Figures 16 (A)-(B)

17 A



17 B



17 C

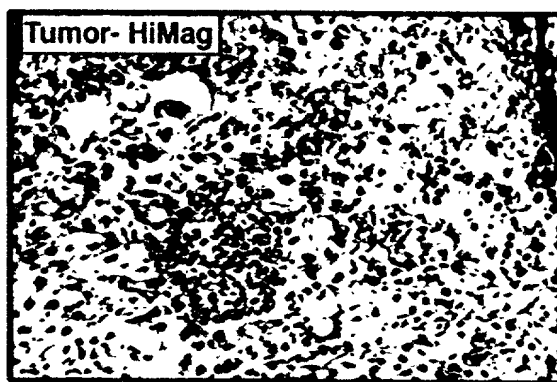
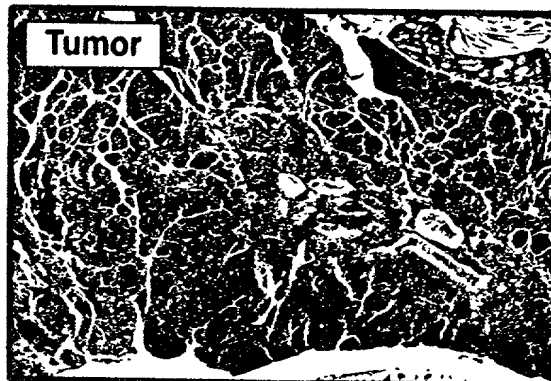


Figure 17 (A)-(C)

18 A



18 B

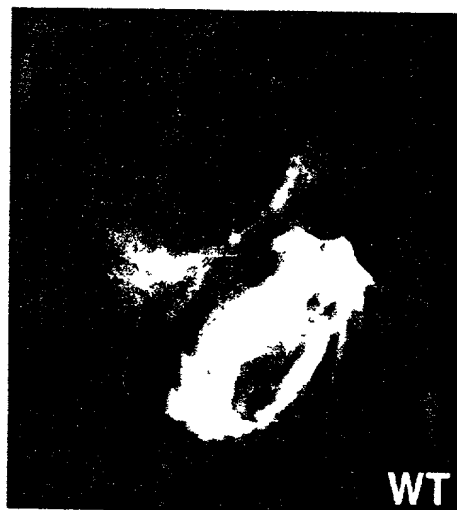


18 C



Figure 18 (A)-(C)

19 A



19 B



19 C

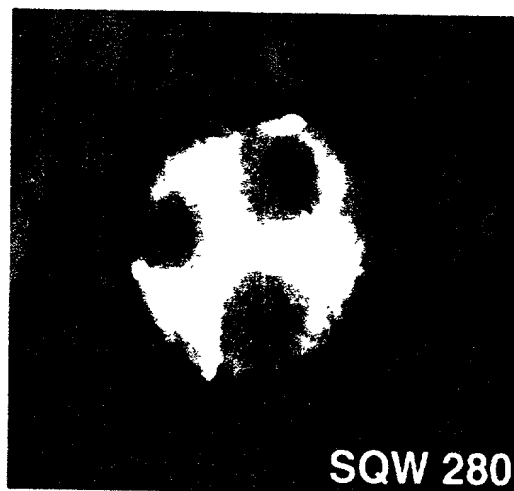
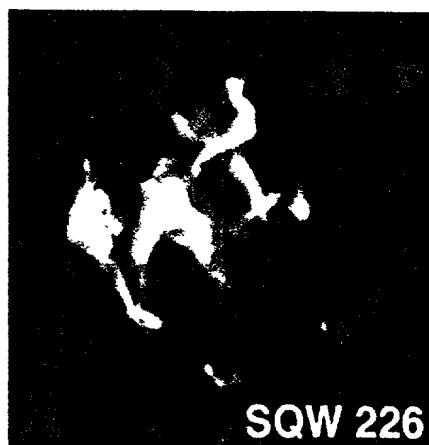


Figure 19 (A)-(C)

19 D



19 E

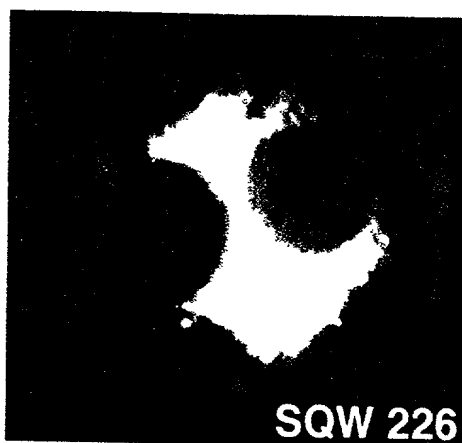
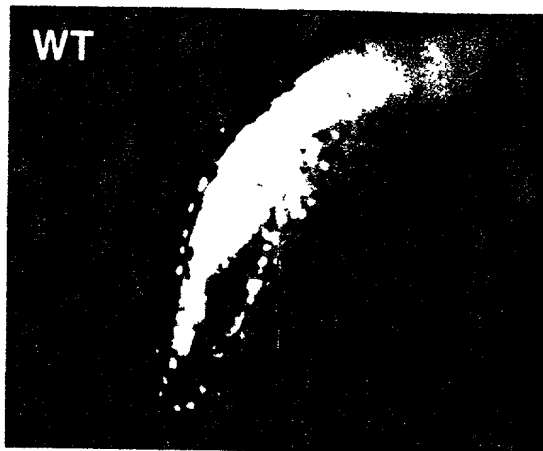


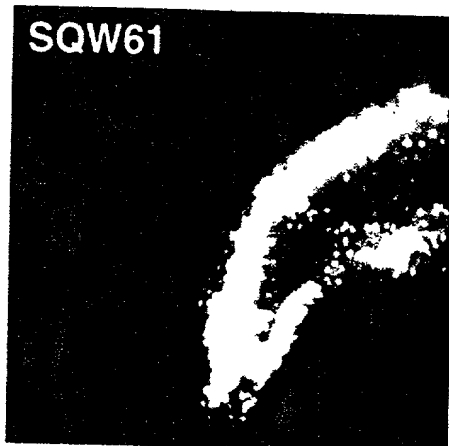
Figure 19 (D)-(E)

20 A WT



20 B

SQW61



20 C

SQW213

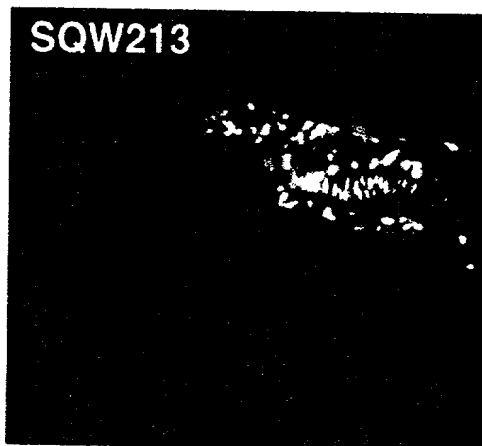
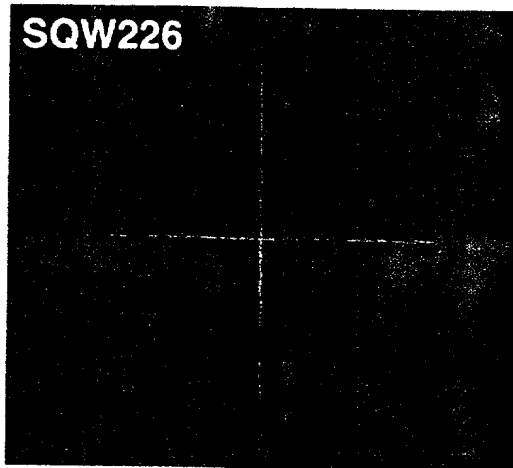


Figure 20 (A)-(C)

20

D

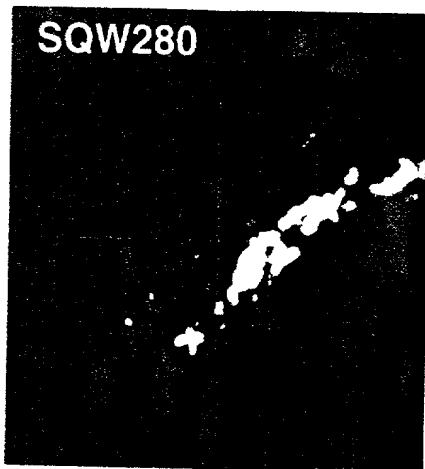
SQW226



20

E

SQW280



20

F

SQW319

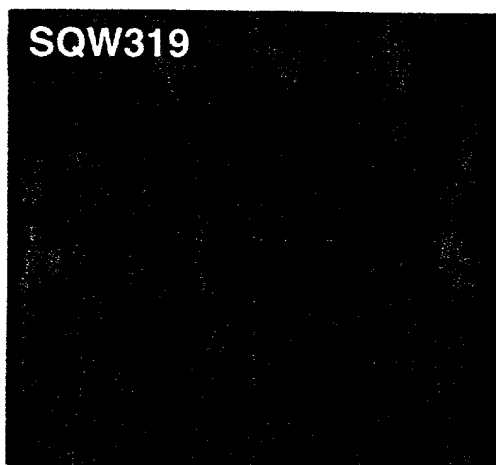


Figure 20 (D)-(F)

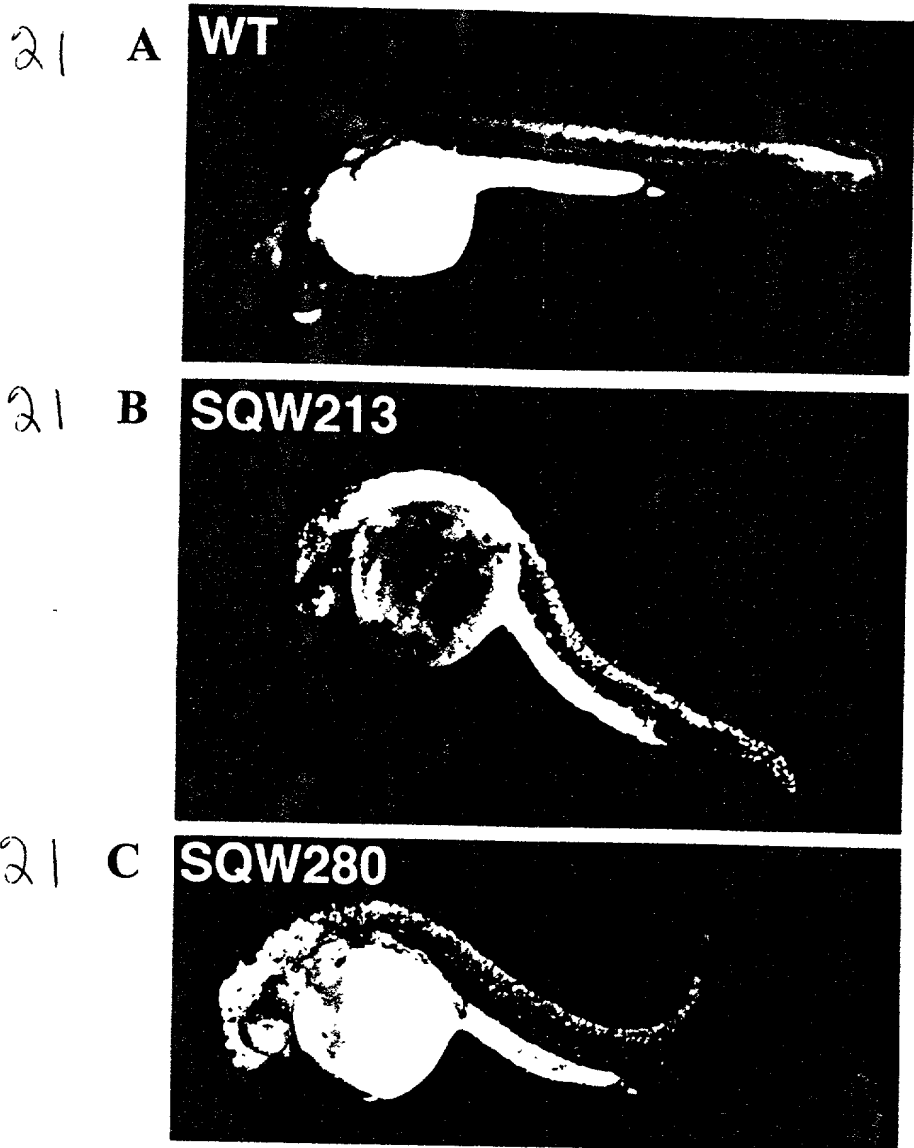


Figure 21 (A)-(C)

21 D

SQW61



21 E

SQW226



21 F

SQW319



Figure 21 (D)-(F)